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09/320,252	05/26/1999	PAUL EVAN MATZ	02950.P033	4390

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EXAMINER

ENGLAND, DAVID E

ART UNIT	PAPER NUMBER
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2143

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/320,252

Applicant(s)

MATZ ET AL.

Examiner

David E. England

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28 - 48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28 - 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 28 – 48 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 28, 29, 32 – 35, 37 – 45, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over O’Neil (6134318) in view of Sequeira (6222530) in further view of Sundaresan (6289369).**

4. Referencing claim 28, as closely interpreted by the Examiner, O’Neil teaches a method of processing transaction routing tasks, the method including:

5. receiving a plurality of transaction requests at an automatic call distribution system, (e.g. col. 6, line 60 – col. 7, line 15);

6. generating a respective transaction event responsive to receiving each of the transaction requests, the transaction event for routing the transaction request to an agent of the automatic call distribution system, (e.g., col. 6, line 60 – col. 7, line 20);

7. responsive to the respective transaction events, identifying a respective workflow associated with each transaction event, (e.g., col. 7, lines 21 – 61);

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8. creating a respective task object for each of the transaction events and identified workflows, (e.g., col. 11, line 43 et seq., the call is considered as a task to be attended to);
9. queuing the task objects in a task object queue, (e.g., col. 11, line 43 et seq., the call is considered as a task and is queued);
10. distributing a task of the task, which at least partially executes the workflow, from the task queue to an available thread within a plurality of threads operating within a multiprocessor system based upon a relative priority of the task, (e.g., col. 7, lines 8 – 15, col. 10, line 65 – col. 11, line 12 & col. 12, line 48 – col. 13, line 3), but does not teach thread pool;
11. identifying a processor affinity attributed to the distributed task of the transaction routing task;
12. assigning the available thread to a processor within the multiprocessor system according to the processor affinity attributed to the transaction routing task to route the transaction request to the agent of the automatic call distribution system.
13. Sequeira teaches a thread pool, (e.g. col. 5, line 46 – col. 6, line 6 & col. 9, lines 16 – 31).
14. It would have been obvious to one skilled in the art at the time the invention was made to combine Sequeira with O'Neil because if an incoming task that is important, needs to be completed first, it could be sent to the next available thread within the pool of threads before the other tasks and be processed sooner.
15. Sundaresan teaches identifying a processor affinity attributed to the distributed task of the transaction routing task, (e.g., col. 8, line 46 – col. 9, line 20 et seq.);
16. assigning the available thread to a processor within the multiprocessor system according to the processor affinity attributed to the transaction routing task to route the transaction request

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to the agent of the automatic call distribution system, (e.g., col. 8, line 46 – col. 9, line 20 et seq.). It would have been obvious to one skilled in the art at the time the invention was made to combine Sundaresan with the combine inventions of O'Neil and Sequeira because utilizing a type of affinity attribute to properly group tasks to processors that are better equipped to handle a specific type of task would be more efficient for the system than having a processor processing tasks of a large variety of different types of data.

17. Referencing claim 29, as closely interpreted by the Examiner, O'Neil teaches the transaction routing tasks includes any one from a group of transaction routing tasks including receipt of a telephone call, receipt of a hang up, a request to store data, a request to retrieve data, a request to generate a user interface for the agent, (e.g., col. 6, line 60 – col. 7, line 7).

18. As to claim 32, as closely interpreted by the Examiner, O'Neil does not specifically teach the transaction routing task has a real-time priority and is distributed in accordance with the real-time priority to the available thread within the pool of threads. Sequeira teaches the transaction routing task has a real-time priority and is distributed in accordance with the real-time priority to the available thread within the pool of threads, (e.g. col. 5, line 46 – col. 6, line 6 & col. 9, lines 16 – 31). It would have been obvious to one skilled in the art at the time the invention was made to combine Sequeira with O'Neil because if an incoming task that is important, needs to be completed first, it could be sent to the next available thread within the pool of threads before the other tasks and be processed sooner.

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19. Referencing claim 33, as closely interpreted by the Examiner, O'Neil teaches assigning the available thread to a processor within the multiprocessor system according to a thread priority, (e.g., Abstract, col. 7, lines 8 – 15, col. 10, line 65 – col. 11, line 12 & col. 12, line 48 – col. 13, line 3).

20. Referencing claim 34, as closely interpreted by the Examiner, O'Neil teaches assigning the thread priority to the available thread based on a priority of the transaction routing task distributed to the available thread, (e.g., Abstract, col. 7, lines 8 – 15, col. 10, line 65 – col. 11, line 12 & col. 12, line 48 – col. 13, line 3).

21. Referencing claim 35, as closely interpreted by the Examiner, O'Neil teaches determining a best match between the transaction routing task and the available thread, (e.g., Abstract, col. 7, lines 8 – 15, col. 10, line 65 – col. 11, line 12 & col. 12, line 48 – col. 13, line 3).

22. Claim 37 – 45, 47 and 48 are rejected for similar reasons as stated above.

23. **Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neil, Sequeira and Sundaresan as applied to claims 29 and 28 above, and in further view of Cota-Robles (6658447).**

24. Referencing claim 30, as closely interpreted by the Examiner, O'Neil, Sequeira and Sundaresan do not specifically teach each workflow has an associated priority that overrides the

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task priority. Cota-Robles teaches each workflow has an associated priority that overrides the task priority, (e.g., col. 5, lines 49 – 64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Cota-Robles with the combine inventions of O'Neil, Sequeira and Sundaresan because dynamically assigning a priority to a group that is more efficient in processing information would speed up processing time for specific groups and allow more groups to be processed in a given period of time.

25. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neil, Sequeira and Sundaresan as applied to claims 29 and 28 above, and in further view of Chang (6314430).

26. Referencing claim 31, as closely interpreted by the Examiner, O'Neil, Sequeira and Sundaresan do not specifically teach a stack of original task and subsequent sub-tasks is maintained for each task object when a sub-task is executed. Chang teaches a stack of original task and subsequent sub-tasks is maintained for each task object when a sub-task is executed, (e.g., col. 2, line 46 – col. 3, line 40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chang with the combine inventions of O'Neil, Sequeira and Sundaresan because utilizing the system of Change establishes a single connection to the database and retains parameters that will allow for subsequent use of the database connection for the duration of the tasks.

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27. Claims 36 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Neil, Sequeira and Sundaresan as applied to claims 27 and 37 above, and in further view of Kimmel et al. (6105053) (hereinafter Kimmel).

28. As to claim 36, as closely interpreted by the Examiner, O'Neil, Sequeira and Sundaresan do not specifically teach the available thread is a member of a class of threads that are included in the pool of threads, the class of threads being associated with the priority. Kimmel teaches the available thread is a member of a class of threads that are included in the pool of threads, the class of threads being associated with the priority, (e.g., col. 6, lines 1 – 21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kimmel with the combine system of O'Neil, Sequeira and Sundaresan because a "thread group" is a set of closely-related threads within a process that will tend to access and operate on the same data. Handling these related threads as a single globally schedulable group promotes a closer relationship between the threads in the group and individual JPs or groups of JPs, thereby improving the ratio of cache hits and overall system performance.

29. Claim 46 is rejected for similar reasons as stated above.

Response to Arguments

30. Applicant's arguments with respect to claims 28 – 48 have been considered but are moot in view of the new ground(s) of rejection.

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31. Examiner feels that IF claim 30 was elaborated on, i.e., more language as to how this affects the priority of tasks and subtasks in the workflow, and claimed in the independent claims it would help further prosecution to an end.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 571-272-3912.

The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David E. England
Examiner
Art Unit 2143

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